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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,749	10/06/2006	Dagnachew Birru	USO40181	3689
24737 7590 12/17/2008 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER HUANG, WEI WU				
ART UNIT 2618		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/599,749

**Applicant(s)**

BIRRU ET AL.

**Examiner**

WEN W. HUANG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-10, 12-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

Claims 1-4, 6-10, 12-16 and 18-21 are pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4, 6-10, 12-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diener et al (US. 7,269,151 B2; hereafter "Diener") in view of Regulinski et al. (US. Pub. No. 2002/0146979 A1; hereinafter "Regulinski").

Regarding **claim 1**, Diener teaches a method for efficiently utilizing spectrum resources (see Diener, abstract) comprising:

determining at least one spectrum opportunity, wherein said opportunity is identified by a frequency band and a time interval (see Diener, fig.4,9 and col. 2 lines 3-12,col. 5 lines 30-36);

determining a set of altered transmission characteristics (data rate, power control, TPC) to allow for transmission of a desired signal in said identified frequency range, wherein said altered transmission characteristics avoid

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interference with signals expected in said frequency range (see Diener, fig. 4,9 and col. 2 lines 12-26, col. 5 lines 36-46); and

transmitting said desired signal using said altered transmission characteristics (adjusted data packet, data rate) when said transmission occurs during said time duration (see Diener, abstract, fig. 4, 6, 9 and col. 2 lines 3-26, col. 5 lines 30-46),

wherein said determining at least one spectrum opportunity comprising:

determining a location of a receiving device (see Diener, 210 of fig. 15, location engine); and

determining an estimated received signal characteristics based on a location of said receiving device (see Diener, fig. 6-9, and col. 6 lines 55-67, col. 14 lines 21-32).

Diener is silent to teaching that comprising:

obtaining location and transmission characteristics for known transmitter from at least one database; and

determining an estimated received signal based on the location and transmission characteristics for known transmitters and a location of said receiving device. However, the claimed limitation is well known in the art as evidenced by Regulinski.

In the same field of endeavor, Regulinski teaches a method for efficiently utilizing spectrum resources (see Regulinski, para. [0019], shared spectrum) comprising:

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obtaining location and transmission characteristics for known transmitter from at least one database (see Regulinski, para. [0162], location and frequency assignment of base station 119 from database 15); and

determining an estimated received signal based on the location and transmission characteristics for known transmitters and a location of said receiving device (see Regulinski, para. [0162], base station 119 and user terminal 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Diener with the teaching of Regulinski in order to increase the possibility for reusing frequency and improve efficiency (see Regulinski, para. [0010]).

Regarding **claim 2**, the combination of Diener and Regulinski also teaches the method as recited in claim 1, wherein the determining at least one opportunity further comprises:

receiving signals in known frequency ranges and determining the characteristics (data rate, power control, TPC) of said received signals (see Diener, abstract, fig.4, 9 and col. 2 lines 12-26,col. 5 lines 36-46).

Regarding **claim 3**, the combination of Diener and Regulinski also teaches the method as recited in claim 2, further comprising: determining a time period of reception of said received signal (see Diener, fig.6 and col. 7 lines 33 - 38).

Regarding **claim 4**, the combination of Diener and Regulinski also teaches the method as recited in claim 2, wherein said received signal characteristics are selected from the group consisting of: received power, signal conversion (i.e. modulation), modulation rate and bandwidth (see Diener, fig.7 and col.8 lines 61-67).

Regarding **claim 6**, the combination of Diener and Regulinski also teaches the method as recited in claim 1, wherein said receiving device location is selected from the group consisting of location engine (GPS location), and manual input (see Diener, fig.15).

Regarding **claim 7**, the combination of Diener and Regulinski also teaches the method as recited in claim 1, wherein an occurrence of said determining at least one spectrum opportunity is performed from selected group consisting of: periodic, time duration, on a known event (see Diener, fig. 4 and col.5 lines 30-46).

Regarding **claim 8**, Diener discloses a device for efficiently utilizing spectrum resources (see Diener, abstract) comprising:

memory (see Diener, 32 of fig.6); and

a processor (see Diener, 30 of fig.6), in communication with said memory, executing code for:

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receiving information items regarding one spectrum opportunity, wherein said opportunity is identified by a frequency range and a time duration (see Diener, fig.4,9 and col. 2 lines 3-12,col. 5 lines 30-36);

determining a set of altered transmission characteristics (data rate, power control, TPC) to allow for transmission of a desired signal in said identified frequency range, wherein said altered transmission characteristics avoid interference with signals expected in said frequency range (see Diener, fig.4,9 and col. 2 lines 12-26,col. 5 lines 36-46); and

enabling transmission of said desired signal in said opportunity frequency range using said altered transmission characteristics when transmission of said desired signal occurs during said opportunity time duration (see Diener, fig.1, 4 and col.5 lines 30-67).

Diener is silent to teaching that comprising

determining said at least one spectrum opportunity information items based on location and transmitting characteristics of known transmitting signals stored in a database and a location of said device. However, the claimed limitation is well known in the art as evidenced by Regulinski.

In the same field of endeavor, Regulinski teaches a device for efficiently utilizing spectrum resources (see Regulinski, para. [0019], shared spectrum) comprising:

determining said at least one spectrum opportunity information items based on location and transmitting characteristics of known transmitting signals stored in a database and a location of said device (see Regulinski, para. [0162],

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location and frequency assignment of base station 119 from database 15; user terminal 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Diener with the teaching of Regulinski in order to increase the possibility for reusing frequency and improve efficiency (see Regulinski, para. [0010]).

Regarding **claim 9**, the combination of Diener and Regulinski also teaches the device as recited in claim 8, further comprising a receiving unit (see Diener, 12 of fig.6) for receiving signals and providing received signal characteristics to said processor (30) (see Diener, fig.6).

Regarding **claim 10**, the combination of Diener and Regulinski also teaches the device as recited in claim 9, wherein said processor further executing code for determining spectrum opportunity information items based on said received signal characteristics (see Diener, fig.1, 4, 6 and col.8 lines 4-12).

Regarding **claim 12**, the combination of Diener and Regulinski also teaches the device as recited in claim 8, further comprising an input/output unit (see Diener, 12 of fig.6) in communication with said processor (30) and said memory (32) (see Diener, fig.6)

Regarding **claim 13**, the combination of Diener and Regulinski also teaches the device as recited in claim 8, wherein said code is stored in said memory (32) (see Diener, fig.1,4,6 and col.8 lines 4-12).

Regarding **claim 14**, the combination of Diener and Regulinski also teaches the device as recited in claim 8, further comprising a transmitting unit (see Diener, 12 of fig.6) for transmitting said desired signal (see Diener, fig.6 and col.5 lines 30-67).

Regarding **claim 15**, Diener teaches a wireless communication system (see Diener, fig.1, 6, col.3 lines 49-67) comprising:

- a receiving unit (12) for receiving information items regarding at least one receivable signal (see Diener, fig.6);

- a processing unit for determining characteristics of said at least one received signal (see Diener, 30 of fig.6);

- a managing unit (see Diener, 300 of fig.9) for altering transmission characteristics of a desired signal based on said determined received signal characteristics (see Diener, fig.6,15 and col.7 lines 6-30, col.11 lines 40); wherein said altered transmission characteristics avoid interference with said received signals (see Diener, fig. 4,9 and col. 2 lines 12-26, col. 5 lines 36-46); and

- a transmission unit (12) receiving said altered transmission characteristics to transmit said desired signal (see fig.4, 6,9,15 and col.2 lines 3-26, col.5 lines 30-46).

Diener is silent to teaching that wherein said receiving unit includes a processor for receiving information associated with location and transmission characteristics of known transmitting signals and said information items are determined from said location and transmission characteristics of said known transmitting signals. However, the claimed limitation is well known in the art as evidenced by Regulinski.

In the same field of endeavor, Regulinski teaches a device for efficiently utilizing spectrum resources (see Regulinski, para. [0019], shared spectrum) wherein said receiving unit includes a processor for receiving information associated with location and transmission characteristics of known transmitting signals and said information items are determined from said location and transmission characteristics of said known transmitting signals (see Regulinski, para. [0162], location and frequency assignment of base station 119 from database 15; user terminal 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Diener with the teaching of Regulinski in order to increase the possibility for reusing frequency and improve efficiency (see Regulinski, para. [0010]).

Regarding **claim 16**, the combination of Diener and Regulinski also teaches the device as recited in claim 15, wherein said receiving unit (12) is a receiver for receiving signals transmitted wirelessly and said information items are associated with said received signals (see Diener, fig.1 and fig.6).

Regarding **claim 18**, the combination of Diener and Regulinski also teaches the device as recited in claim 15, wherein said opportunities are determined with regard to frequency ranges and time periods (data rate, power control, TPC) (see Diener, abstract, fig.4, 9 and col.2 lines 12-26,col.5 lines 36-46).

Regarding **claim 19**, the combination of Diener and Regulinski also teaches the device as recited in claim 15, wherein said altered transmission characteristics are selected from the group consisting of: received power, signal conversion (i.e. modulation), modulation rate and bandwidth (see Diener, fig.7 and col.8 lines 61-67).

Regarding **claim 20**, the combination of Diener and Regulinski also teaches the device as recited in claim 15, wherein said desired signal transmission power in a frequency range of said received signals is substantially higher when said received signals are not present (see Diener, fig.1 and col.3 lines 49-55) (i.e. interference will be minimum if received signals are not present in the process, therefore transmission will significantly higher).

Regarding **claim 21**, the combination of Diener and Regulinski also teaches the device as recited in claim 15, wherein said desired signal transmission characteristics (data rate, power control, TPC) are altered in a

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frequency range/time period to avoid interference with signals expected in said frequency range (see Diener, fig.4,9 and col.2 lines 12-26,col.5 lines 36-46).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 8 and 15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN W. HUANG whose telephone number is (571)272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. W. H./  
Examiner, Art Unit 2618

/Matthew D. Anderson/  
Supervisory Patent Examiner, Art Unit 2618